

Fig. 6 is a schematic side view representation of another embodiment in which the core of a single-mode fiber has been expanded to a few-mode fiber level just before splicing with the LACDCF;

Fig. 7 is a schematic side view representation of an embodiment where the core of the few-mode fiber has been expanded prior to bundling and then fused and tapered within the bundle fusion region to the appropriate mode size before splicing with the LACDCF;

Figs. 8A to 8^L~~K~~ represent a schematic view of different fiber bundle configurations that may be used within the scope of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Preferred embodiments of the invention will now be described with reference to the appended drawings in which the same parts are designated by the same reference numbers.

In the embodiment shown in Fig. 1, a few-mode fiber 10 is provided, having a core 12 of 50 μ m diameter and a cladding 14 of 125 μ m diameter. This few-mode fiber 10 is bundled with two multimode fibers 16, 18 and the bundle is fused in the fusion region 20. The multi-mode fibers 16, 18 each have a core 22 of 105 μ m diameter and a cladding 24 of 125 μ m diameter. The three fibers total 375 μ m in their longitudinal periphery before fusion and 350 μ m after fusion. The fused end of this structure was then cleaved, aligned and spliced to the end 25 of the LACDCF 26 having a large area core 28 of 50 μ m diameter and an inner cladding 30 of 350 μ m diameter. The second outer polymer cladding 32 was stripped from the end portion 27 of the LACDCF prior to splicing in the splicing region 34. The polymer cladding is stripped so that it would not burn during splicing. However, if a non-polymeric outer cladding is used, it does